3516

Diag. Cht. No. 4116

Department of Commerce and Labor
COAST AND GEODETIC SURVEY

Superintendent.

State: N J.

DESCRIPTIVE REPORT.

See Rept # - for Positions

Hyd *Sheet No.* 3516

LOCALITY:

Maui - N. E. Coast

1913

CHIEF OF PARTY:

J B Miller

11—4045

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DEPARTMENT OF COMMERCE

Coast and Geodetic Survey

O. H. Tittmann, Superintendent

HAWAIIAN ISLANDS

Maui Island, East Coast

Original Hydrographic Sheet No. 74

PAUWALU POINT TO HAMOA

Surveyed in February and March, 1913 by the party on the

C. & G. S. Steamer PATTERSON

James B. Miller, Assistant, C. & G. S., Chief of Party

G. C. Mattison, Aid, C. & G. S., in charge of hydrographic party

Scale: 1: 20 000

Positions plotted by O. W. Swainson, Aid

checked by G. C. Mattison, Aid

3516

DEPARTMENT OF COMMERCE AND LABOR
COAST AND GEODETIC SURVEY.

O. H. Tittmann, Supt.

HAWAIIAN ISLANDS

NORTH EAST COAST OF MAUI ISLAND

A DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SHEET ~~74~~ 3516

Surveyed by the Steamer PATTERSON, February & March 1913.

REPORTS, LIMITS, METHODS, OBSERVER.

I have the honor to report as follows upon hydrographic sheet No. 74, which shows inshore hydrography on the northeast coast of Maui Island, between Pauwelu Point and Kuloa Point, as done in February and March, 1913 by a party from the Str. PATTERSON. The sounding was done in Launch No. 47, in charge of George C. Mattison, Aid, C. & G. Survey, and was all done with the hand lead. Lines were run at intervals of 1/8 mile and closer. In Hana Cove and vicinity of Cameron Rock, lines were run at intervals of 50 meters. The lines were run in a direction perpendicular to the general coast line.

GENERAL DESCRIPTION.

Pauwalu Point is a bold, steep, rocky point.

Mokumana Rock is a steep, black rock, and looks from both directions along the coast like a continuation of Pauwalu Point with a gap 30 meters wide between the point and the rock. 140 meters southeast of Pauwalu Light House is a black bold point with an archway through it. 340 meters south of the Light House, at the head of a small cove, is a pebble beach. Between here and Wailua, the shore is steep and rocky, rising to a height of 105 feet 3/4 mile south of the Light, and then gradually decreasing until Wailua is reached, where there is a pebble beach. 1150 meters south by east from Pauwalu Light House, there is a conspicuous waterfall consisting of 2 small streams. This fall has cut a small bight in the cliff. The country back of the shore is almost flat, and is thinly wooded. About 3/4 mile south by west of Pauwalu Light is a Catholic church, the spire of which is visible from the east, but from other directions is partially, and sometimes wholly hidden by some trees. At Wailua, there is a small cluster of houses. There is an easy slope from the beach back to the hills. Just southeast of Wailua Cove is a steep, bold, rocky point, rising to an elevation of 370 feet, while 1/4 mile southeast of Wailua is a cove with a pebble beach at its head, a small grassy flat with a grove of cocoanut trees, and two deep fertile ravines extending inshore. The ravines are heavily wooded. Just east of the cove is Makoloaka Point, a steep, rocky point 230 feet high. Just off the point is a pointed rock rising to an elevation of 105 feet. From this point to a bold, rocky point 600 meters south-southeast, the bluff increases in height until an elevation of 390 feet is reached. Adjoining this point, a deep heavily wooded ravine extends back from a pebble beach.

There is a small lagoon just back of the beach. Just southeast of this beach is a steep, rocky point with a height of 380 feet. Between this point and Wailua, the ravines are heavily wooded, while the rounded divides are grassy, and thinly wooded in places. 3/4 mile south-southeast from Makoloaka Point is an irregular shaped cove with a pebble beach near its northwest end, and steep rocky shore line, which drops off from a height of about 30 feet at the southeast end. The ravine inshore of the cove is wooded and is very irregular. There are several small waterfalls at various elevations and three small streams unite in a small fall 10 or 15 feet in height near the beach just west of a grassy, thinly wooded point. Just east of this cove is a steep, rocky point with an elevation of 470 feet and which is thinly wooded on top. The cove just east has a pebble beach at its head, and several off-lying rocks. The ravine extending back from the beach is a broad, wooded ravine with steep wooded sides. The adjoining point which is bold and rocky, rises to an elevation of 365 feet, and is thinly wooded on top. Just east of this point, and 1/2 mile south by west from Opuhana Point, is a deep heavily wooded ravine extending inshore from a pebble beach. From the high bluff on the east side of this ravine to the derrick at Nahiku, the bluffs gradually decrease in height until they come almost to the waters edge at the derrick. From Opikeula Point to the cove, 2 miles, southeast, the bluffs rise from an elevation of 50 feet to 160 feet. The shore line is very irregular, having many low rocky points extending out from the bluff, and many bare rocks. The bluffs are steep and rocky.

Opikeula Point is an almost flat, grassy point. The land back of the bluffs is flat, and slopes easily up to Mount Haleakala, where it is steeper. Near the shore, there is a green scrubby growth. The cove 2 miles southeast of Opikeula Point has a pebble beach 250 meters long. There are two or three houses and a few cocoanut trees in this cove. From this cove to Kalahu Point the rocky shore line, steep in places, is very irregular. The country back from the shore is flat and thinly wooded, with occasional taro patches. From Kalahu Point to Kūpukaulua Point, the shore line is very regular for the first one and one half miles, dropping off abruptly from a flat, grassy plateau. 100 meters inshore, there is a large cane field extending well back up the slope. The settlement of Kaleku, a cluster of houses 1 3/4 miles south-south east from Kalahu Point, is in the midst of the cane fields. The last mile of shore line between Kalahu and Kūpukaulua Points is very rocky, steep and irregular, and has many bare rocks close inshore. The country back of the shore line is thinly wooded. 1/4 mile southwest of Kūpukaulua Point, there is a cove with a pebble beach at its head. Southeast of the cove is a grassy point, but back of this, the country is thinly wooded. From this cove to Nanualele Point, the rocky shore line is very irregular, characteristic of the lava flow. The first mile of coast southeast from the cove is thinly wooded almost to the shore line, but towards Nanualele Point the black, jagged lava formation extends farther back from the shore.

Nanualele Point ia a low, flat point, the outer end of a lava flow. Here the bare lava extends inland 3/4 mile. The country back of the lava is thinly wooded. There is a ~~large~~ long pebble beach in the bight on the north side of Nanualele Point.

Kauiki Head is an extinct crater about 400 feet high. The outer half of the crater has been washed away, the remaining half being covered with a scrubby growth. The dark colored cliffs around the head are quite steep. From Kauiki Head to Makaalae Point, the rocky shore line is very irregular. A large cane field comes almost down to the shore line. 1 1/2 miles south-southwest from Kauiki Head is I wi o Pele, an extinct crater 400 feet high.

Like Kauiki Head, the outer half of the crater has been washed away. In the southwest corner of the cove just below Iwi o Pele is a pebble beach.
Alau Island, 3/4 mile east by south from Iwi o Pele, is a volcanic island about 100 feet high, the top being covered with grass. The cove at Mokae, 3/4 mile southwest from Alau Island, has a pebble beach. There is a warehouse on the east shore of the cove, and a small cluster of houses near the head of the cove. 1/3 mile north of the cove is a small settlement.
Makaalae Point is a low, flat point covered with grass. There are two deep bights southwest of the point, and at the head of each is a pebble beach. The foundation of an old derrick is still seen on top of the bluff in the southermost of the two bights. There is a deep cove 3/4 mile southwest of Makaalae Point. About 100 meters back from the bluff is a church. There is a scrubby growth extending inland. From this ~~point~~ cove to Muolea Point, the shore line is very irregular, and in some places drops off sharply forming low bluffs. The country back from the shore is thinly wooded, and there are a few houses scattered along the coast.
Muolea Point is a black, rough point, characteristic of the lava flow. There is a small grove of cocoanut trees 100 meters inshore. From this point to Kuloa Point, the shore line consists of steep bluffs of varying heights, reaching a maximum height of 240 feet midway between the two points, from which place the bluffs gradually decrease in height to the two points. Numerous fertile valleys cut this bluff, and at the shore end of each, there is a pebble beach.
Wailua Cove has a broad valley running back from the pebble beach. In the center of the valley is a hummock with a large cross on it, which can be seen for quite a distance. There is a grove of cocoanut trees near the beach. The country back from the bluffs is thinly wooded.
Kuloa Point is a flat, green point covered with a scrubby growth near shore. A large cane field comes almost to the shore line.

INSHORE DANGERS.

1 mile southeast of Pauwalu Light House, and 1/4 mile from the shore, is a rocky ledge about 15 meters across. 100 meters north-northeast from this ledge, is a rock awash, and 180 meters off in the same direction is a sunken rock. From Opikeula Point to Kalahu Point, the bottom is very irregular and foul, sometimes 300 meters off shore, for most of the way. The position of the inshore rocks and pinnacles are shown on the hydrographic and topographic sheets. For one mile in both directions from Kapukaulua Point, there are many rocks close inshore, as shown on the sheets. 1/3 mile northeast from Nanualele Point, there are two large rocks with least depths of 5 fathoms. 5/8 mile southeast of Alau Island is a group of ~~four~~ five rocks, two with depths of 2 fathoms and 1½ fathoms, each, the others ~~two~~ having depths of 4 and 5 fathoms ~~respectively~~. These rocks are almost 1/4 mile inshore of charted position, and closer inshore than mentioned in the Coast Pilot. There is a shoal extending from Alau Island to the mainland ~~and~~ which is usually indicated by breakers, even with a small swell.

CHARACTER OF BOTTOM.

The bottom is rocky inshore, and sandy where the deeper soundings were taken. Most of the pinnacles sounded on were covered with coral. Nanualele Point has a coral reef extending from it in a northeasterly direction, about 300 meters off shore. The bottom just northeast of Kauiki Head is very foul and irregular.

ANCHORAGES.

At most times when the trade winds are blowing, a good anchorage for launches can be found in the cove southwest of Mokaloaku Point. Anchor in 4 fathoms, rocky bottom, in the middle of the cove. The cove 2 miles

southeast of Opikeula Point,is a very good anchorage for launches at most times when the trade winds are blowing. The cove just southwest of Kapukaulua Point can be used as an anchorage for launches sometimes when the trades are blowing. Between Kauiki Head and Alau Island , anchor as desired in 7 to 15 fathoms. When a southerly wind is blowing there is an excellent anchorage for vessels of all sizes just north of Alau Island. Anchor in from 10 to 15 fathoms, hard sand bottom, 250 meters off the north shore of the island. Wailua Cove is a good anchorage for launches at most times when the trade winds are blowing.

LANDING PLACES.

At Wailua,landing can be made at times when the trade winds are blowing, but the cove just southeast is a most excellent landing place when the prevailing winds are blowing. The cove 2 miles southeast of Opikeula Point is a good landing place when the prevailing winds are blowing. In the cove southwestof Kapukaulua Point, landing may be made at times when the trade winds are blowing. A landing can sometimes be made at Mokae Cove when the trades are blowing. From here to the south, landings can be made in almost all the coves, when the trade winds are blowing.

CURRENTS.

At Pauwalu Point and off Nahiku,a current running in a southeast direction prevails, but from here to Hana Cove,there is no current apparent near the shore. Off Nanualele Point and Kauiki Head,there is a decided current running in a northeast direction, which makes it very choppy around these points when only a light northest breeze is blowing. From Kauiki Head to Kuloa Point,this current is fairly strong, being especially felt off Alau Island.

STREAMS.

All the streams are small and none are navigable.

Nahiku.

Nahiku is a small settlement on a flat point,3 miles southeast of Pauwalu Point. There are two churches about 300 meters from the shore line, partly hidden by trees. The shore line is steep and rocky. On the west side of Nahiku is a small cove with a pebble beach at its head, and a derrick on each of the rocky points on either side of the cove. This cove is an excellent landing place when the trade winds are blowing, and a good anchorage for launches. The topographic and hydrographic sheets show some rocks close inshore that should be avoided. The derrick on the northest point of the bight is the one in use now. There is 9 feet of water about 4 meters from the derrick. The derrick on the southwest point of the bight has deep water close to it, having 20 feet,4 meters from it. There is an anchorage for vessels of same size, when the trades are blowing,just west of Nahiku. Anchor in 9 1/2 fathoms,one half way between the rock awash 200 meters northwest of the northeast derrick, and the rock awash 560 meters west of the same derrick. The first mentioned rock should bear east-northeast (true), while the other rock should bear west-southwest (true). The southernmost derrick should bear south-east 3/4 south. Nahiku is the center of the new rubber district.

Hana.

There are three distinct settlements forming the town of Hana. The first one,near the shore of Hana Bay,contains several stores, the post office, and a good hotel. There is another cluster of houses and two churches near the sugar mill, 1/2 mile west-southwest from Kauiki Head. 1/2 mile south-southwest from Kauiki Head is a Philipino settlement. Cane fields surround the town, and extend almost to the shore line. There is a wharf on a small, rocky point in the southwest corner of the bay. There is a depth of 10 feet near the end of the wharf. A detailed sketch of the wharf and soundings close

to it can be found in volumn 2, page 16, of the sounding record. Hana Bay is not used very much by large vessels. For small vessels, there is an anchorage with 140 meters of swinging room, in the southwest corner of the bay, half way between the two fathom shoal, known as the middle ground, and the coral shoal extending off from the south shore. Anchor in 5 fathoms, with the wharf and the stack of the sugar mill in range, and the light house bearing east-southeast (true). For vessels of deeper draft, the anchorage mentioned in the Coast Pilot, by the entrance to Hana Cove, has a depth of 9 or 10 fathoms, instead of 6 or 7 specified. All soundings in this harbor are deeper than shown on existing charts, and ~~no~~ on the middle ground deeper water was ~~could be~~ found, 2 fathoms being the shoalest sounding obtained in that vicinity. This harbor is very good when the winds are not from the east. There is weekly communication between here and Honolulu by steamer. This weekly steamer can be obtained for towing purposes. A wharf extending into deep water is contemplated.

Respectfully Submitted,
George C. Mattison,
Aid, C. & G. S.
At Sea, Mar. 18, 1913.

Approved
J. B. Miller
Asst., C. & G. S.,
Chief of Party

3516

SHEET NO. "74" Locality: Maui Island, T. H.

Date	Boat	Letter	Vol.	Hours	Positions	Sdgs.	Miles (stat)
(1913)							
Feb. 12	Launch 47	a	1	7.0	90	263	13.4
" 13	" "	b	1	10.5	143	413	18.0
" 24	" "	c	1	2.5	43	109	6.0
" 25	" "	d	1&2	11.0	169	520	13.5
" 26	" "	e	2	10.0	120	362	16.4
" 27	" "	f	2&3	9.5	120	349	14.7
" 28	" "	g	3	9.5	112	336	14.6
Mar. 1	" "	h	3	5.0	72	217	7.0
" 3	" "	j	3	4.0	47	124	5.5
" 5	" "	k	3	7.0	76	152	5.0
				76.0	992	2845	114.1

Square statute Miles 12.6

ALB
July 11, 1913.

HYDROGRAPHIC SHEET 3516.

North East Coast of Maui Island, Hawaiian Islands, by Assistant J. B. Miller in 1913.

TIDES.

	Kahului ft.	Hana ft.
Mean lower low water, or plane of reference on staff	3.0	5.1
Lowest tide observed " "	2.0	5.2
Highest " " " "	6.3	7.8
Mean range of tide	1.6	1.8

Hyd.c Sheet #3516.

The work on this sheet shows the inshore hydrography on the N.E. coast of Maui Island. The sheet was plotted in the field, inked and verified in the office.

The positions of rocks plotted from the sounding records are approximate, their location having been determined by approximate distances only. A description of the inshore dangers is given in the Descriptive Report of the Chief of the party.

On a number of cases rocks and islets used as signals were obscured by the station symbols, e.g. stations A, B, G, I, Ro and others (See Field Instructions §155)

On a number of places the exact shoreline as well as dangers plotted on the Top.c Sheet were not transferred to the Hyd.c Sheet.

On page 16 Vol II there is a sketch of "Hana Wharf". As the exact location of the wharf cannot be definitely determined from the incomplete notes, it was left unplotted.

The work on the whole was very well executed, and the records kept in very good shape.

Soundings plotted in fathoms.

J.B. Shkeavin

Aug. 11-1914.

On comparing the overlying work of Hyd.c 3516 and Hyd.c 3519 it was found that the two sheets do not agree very well. But in almost every case Hyd.c 3519 showed a lesser depth than Hyd.c 3519 and for this reason the extra soundings from Hyd.c 3519 were not transferred to 3516 (With one exception).